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Your Aquarium-
A Reflection of Nature

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Your Aquarium- A Reflection of Nature

Maintaining a fish aquarium is an entertaining hobby; it can also help you to understand the environment if you think of the aquarium as an example of a lake or pond in miniature. The same factors that are important to fish in an aquarium are important in their natural environment.

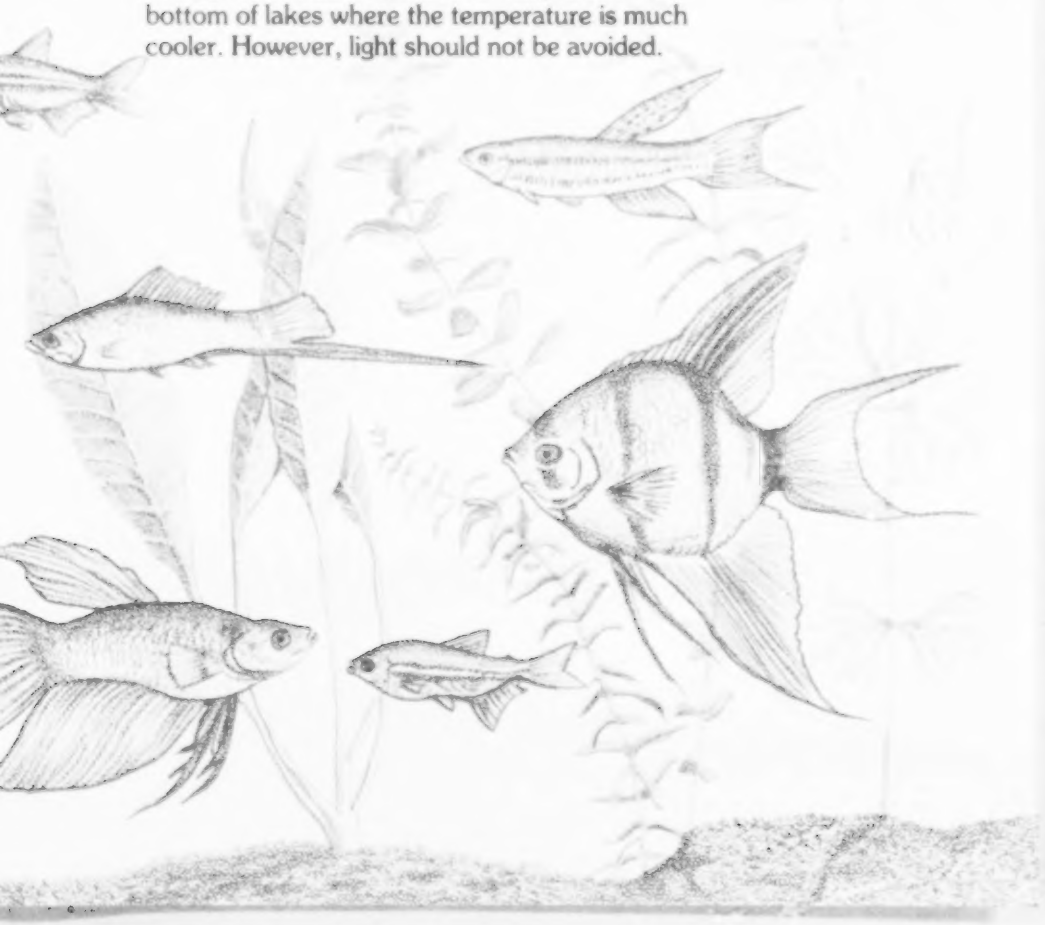
Oxygen is important for life everywhere. Nature provides her waterways with oxygen through movement of water and by release of oxygen into the water from the plant life under the surface. The oxygen level can be improved in an aquarium by the use of an air stone which increases the exchange of oxygen gases at the surface of the tank. Although not essential, aquatic plants can not only boost the amount of oxygen in a aquarium but are ornamental as well.

The pH (acidity) of an aquatic environment is critical to the survival of it's inhabitants. Many fish cannot survive in water that is too alkaline or too acidic. Most freshwater fish prefer a pH range of 6 — 8.6. Below pH 6, fish may start to experience problems with bodily functions which can lead to death. Acid rain is a threat to waterways because it lowers the pH of the water killing the aquatic life.

Of equal importance is a good filtration system. In addition to removing particles from the water, a filter system will remove ammonia, a waste product excreted by fish, as well as absorbing other impurities. In nature, wetland areas such as swamps are important filters. As water passes through, aquatic plants and tree roots act as barriers to debris and increase sedimentation. The water coming out of this area is cleaner than before. In an aquarium, filtration can be accomplished by using the same materials used in nature such as gravel, carbon, and

clay beads, or man-made materials such as glass wool, or synthetic fiber pads. There are also naturally occuring bacteria in both the aquarium and in nature that act as filters. These bacteria convert the toxic ammonia excreted by fish into non-toxic nitrate. Filter systems in both the aquarium and in nature have limitations. If they are overloaded with large quantities of impurities, they cannot absorb everthing. Plants and animals are then forced to live in polluted water.

Altering the temperature of a tank or a natural body of water can be equally devastating. In some fish it may cause shock making them more vulnerable to disease. In addition, raising the temperature by dumping heated waste or locating an aquarium in direct sunlight dramatically increases the growth of algae. Too much algae is unsightly and clogs the surface decreasing the oxygen available to fish and aquatic plants. Some fish, such as trout and bass, prefer shaded streams or they live at the bottom of lakes where the temperature is much cooler. However, light should not be avoided.



Aquatic animals need a day/night cycle to remain healthy. Most aquariums can be purchased with an artificial light source.

An aquarium owner must also consider the size of his tank and not overload it. It is not just the number of animals in a tank that is important but their size is too. The fewer fish you have in your aquarium, the larger they will be able to grow. Large fish populations in small streams and ponds tend to be composed of smaller-sized individuals. This is the only way they can survive in a small space. An aquarium with lots of fish and other animals such as crabs or snails is interesting but the tank may not be large enough to support these creatures with enough oxygen or have the ability to filter all the wastes produced. This problem can be seen in the Chesapeake Bay where decaying plant and animal matter has sharply reduced the oxygen available to the living organisms.

It is important to consider these factors when setting up an aquarium in order to provide fish and other aquatic animals with an environment similar to their natural home. Once established, the aquarium is not just an attractive "living" ornament but an opportunity to watch and appreciate nature in miniature.

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